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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

LAM, DANIEL K

ART UNIT	PAPER NUMBER
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2667

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DATE MAILED: 12/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/622,241

Applicant(s)

SALONAH O ET AL.

Examiner

Daniel K Lam

Art Unit

2667

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 August 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 14-19, and 21-23 is/are rejected.
- 7) ☒ Claim(s) 12, 13 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Specification

1. This application does not contain an abstract of the disclosure as required by 37

CFR 1.72(b). An abstract on a separate sheet is required.

2. The disclosure is objected to because of the following informalities:

On page 6, line 27, “fro different” should be “*for* different ” instead.

On page 7, line 1, the phrase “ $S(d_{l,i})$ is thus a measure for the carrier to interference ratio”, is not correct since according to the equation (2), on page 6, $S(d_{l,i})$ is related to path loss and average interference power.

Corrections are required.

Claim Objections

3. Claims 7, 8, 15, and 16 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend on another multiple dependent claim.

See MPEP § 608.01(n). Accordingly, the claims 7, 8, 15, and 16 not been further treated on the merits.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3, 10, 11, 14, 17-19, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Pat. No. 6,223,031 issued to Naslund in view of U. S. Pat. No. 6,044,272 issued to Kobylinski et al.

Regarding claim 1, Naslund discloses a method of measurement reporting in a telecommunication system comprising mobile and base stations, wherein decisions upon establishing or canceling a communication link between a mobile station and a base station are made in the network on the basis of measurement reports sent from the mobile station to the network, characterized in that the method comprises the steps of

- defining first and second sets of trigger conditions corresponding, respectively, to radio signal properties in the uplink and downlink directions (see fig. 6 reference 301 and col. 12, lines 24-26), and
- defining a logical function for combining said first and second sets of trigger conditions (see fig. 6 reference 303, and col. 12, lines 49-57).

However, Naslund does not disclose the limitation of, at the mobile station, determining the state of each trigger condition, combining the states according to the logical function, and sending a measurement report to a base station in dependence upon the condition of the logical function.

Kobylinski et al. discloses a system and a method for improving mobile assisted handoff in digital cellular communication system with the limitation of, at the mobile station, determining the state of each trigger condition, combining the states according to the logical function, and sending a measurement report to a base station in dependence upon the condition of the logical function (see fig. 1A references 10, 12, 14, and 16, and col. 3, lines 1-14).

Therefore, it would have been obvious to those having ordinary skill in the art to allow the mobile station to measure, determine, and message each triggering condition, and then send the result back to the base station for further handoff determination for couple of reasons. Firstly, the mobile station is constantly moving from cell to cell and, thus, is in contact with different base stations as taught by Kobylinski et al. (see col. 1, lines 14-21). Secondly, by having the mobile station to measure, determine, and message each triggering condition, the quality of handoff process can be improved as taught by Kobylinski et al. (see col. 2, lines 16-21).

Regarding claims 2 and 3, in addition to disclose the limitations regarding claim 1 in the previous paragraph, Kobylinski et al. further discloses that the first and second set of

triggering conditions (claim 2); and logical functions are dynamically defined by the network (claim 3). See fig. 1A references 12 and 14, and col. 3, lines 6-12.

Regarding claim 17, in addition to disclose the limitations regarding claim 1, Kobylinski et al. further discloses the limitation that the network informs the mobile station what information to include in the measurement report, and the mobile station includes this information in the measurement report (see fig. 1A references 12 and 20, col. 4, lines 45-47, and col. 4, lines 30-34).

Regarding claims 10, 11, 14, and 21, in addition to disclose the limitations regarding claims 1 and 17, in the previous paragraph, Naslund further discloses that at least one of the trigger conditions is a condition for the received power level or a function thereof (claim 10); at least one of the trigger conditions is a condition for the interference in the received radio signal or a function thereof (claim 11); at least one of the sets of trigger conditions is a condition for the change of the parameters of the received radio signals or a function thereof (claim 14); and the measurement report comprises a value for the carrier to interference ratio of a reported signal or a function thereof (claim 21). See col. 8, lines 60-63.

Regarding claims 18 and 19, in addition to disclose the limitations regarding claim 17, Kobylinski et al. further discloses the radio signals are ordered using a predefined condition, and in the measurement report sent from the mobile station, information about

the properties of a predefined number of the best radio signals according to the condition are reported (claim 18); and the number of radio signals to be reported is given by the network (claim 19). See fig. 1A references 10, 12, 14, and 16, and col. 4, lines 30-37).

Regarding claim 22, Naslund further discloses a mobile station monitors the radio signals sent by the base stations, characterized in that the mobile station has

- receiving means for receiving information about first and second set of trigger conditions corresponding, respectively, to uplink and downlink signals and a logical function, and monitoring means for monitoring radio signals (see fig. 5 reference 202, and col. 8, lines 64-67),
- checking means which is responsive to the receiving means and the monitoring means and which has the functionality of checking the state of each trigger conditions (see fig. 5 reference 206, and col. 10, lines 26-28), and
- combining means responsive to the checking means for combining the states according to the logical function (see fig. 5 reference 203, and col. 9, lines 49-53).

And Kobylinski et al. further discloses a sending means responsive to the combining means for sending a measurement report to the base station (see fig. 1A reference 16).

6. Claims 4-6 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Pat. No. 6,223,031 issued to Naslund in view of U. S. Pat. No. 6,044,272 issued to Kobylinski et al. in further view of U. S. Pat. No. 5,722,073 issued to Wallstedt et al.

Regarding claims 4 and 23, after disclosing the limitations regarding claim 1, 2, or 3, in the previous paragraphs, neither Naslund nor Kobylinski et al. discloses any limitation regarding the followings. However, Wallstedt et al. discloses the following limitations.

- A first combination of the first and second sets of trigger conditions and the logical function are defined to be used for radio signals from or to active base stations having an active link with the mobile station (claim 4). And the receiving means are arranged to receive a first combination of a first and a second set of trigger conditions and logical function (claim 23). See col. 6, lines 12-17.
- A second combination of the first and second sets of trigger conditions and the logical function are defined to be used for radio signals from or to candidate base stations not having an active link with the mobile station (claim 4). And the receiving means are arranged to receive a second combination of a first and a second set of trigger conditions and logical function (claim 23). See col. 6, lines 29-34.
- At the mobile station, the first combination is used for radio signals from or to active base stations having an active link with the mobile station and the second combination is used for radio signals from or to candidate base stations not having an active link with the mobile station (claim 4) (see col. 5, lines 57-62).

In addition to disclose the limitation regarding claim 22 in the previous paragraph, Naslund further discloses the checking means (see fig. 5 reference 206, and col. 10, lines 26-28) and the combining means (see fig. 5 reference 203, and col. 9, lines 49-53) are arranged to use the first combination for radio signals from or to active base stations having active link with the mobile station and the second combination is used for radio

signals from or to candidate base station not having an active link with the mobile station (claim 23).

Therefore, it would have been obvious to those having ordinary skill in the art to allow the mobile station to monitor the active and inactive links, and then send the result back to the base station for further handoff determination for couple of reasons. Firstly, the mobile station is constantly moving from cell to cell and, thus, is in contact with different base stations as taught by Kobylinski et al. (see col.1, lines 14-21). Secondly, by having the mobile station to measure, determine, and message each triggering condition, the quality of handoff process can be improved as taught by Kobylinski et al. (see col. 2, lines 16-21).

Regarding claims 5 and 6, in addition to disclose the limitation regarding claim 4 in the previous paragraph, Wallstedt et al. further discloses the step of creating an active link between the mobile station and a candidate base station not having an active link with the mobile station when the network receives from the mobile station a measurement report triggered by the radio signals from or to that candidate base station (claim 5); and the step of deleting an active link between the mobile station and a base station when the network receives from the mobile station a measurement report triggered by the radio signals from or to that active base station (claim 6). See col. 6, lines 49-52.

Art Unit: 2667

7. Claims 7-9, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Pat. No. 6,223,031 issued to Naslund in view of U. S. Pat. No. 6,044,272 issued to Kobylinski et al. in further view of U. S. Pat. No. 5,722,073 issued to Wallstedt et al. furthermore in view of U. S. Pat. No. 5,267,261 issued to Blakeney II et al.

Regarding claim 7, after disclosing the limitations regarding claim 4, in the previous paragraph, Naslund, Kobylinski et al. and Wallstedt et al. do not disclose the limitations that the two different logical functions are such that when a base station is in the active set, a measurement report is not triggered by a radio signal of that base station for the same set of radio properties as would trigger the transmission of a measurement report when the base station is in the candidate set.

Blakeney II et al. discloses a method for mobile station assisted soft handoff in a CDMA system. When a mobile station detects a good pilot signal as determined by a logical function, such as crossing a predetermined threshold and sending the message, from a base station not in the active set but in the candidate set, it sends a measurement message to the current base station (see fig. 9 reference 252, and col. 28, lines 9-17).

Therefore, it would have been obvious to those having ordinary skill in the art to allow the mobile station to report quality of the communication channels to the base stations in the candidate set so that the system controller can instruct the base stations in the candidate set to establish communications with the mobile station (see col. 3, lines 62-68). As a result, the mobile station is communicating with at least one base station at all times throughout the handoff process. Hence, there is no interruption in communication

between the mobile station and the user as taught by Blakeney II et al. (see col. 4, lines 36-43).

Regarding claim 8, in addition to disclose the limitations regarding claim 7 in the previous paragraph, Blakeney II et al. further discloses that the method comprises a step of defining a logical function for use when the number of base stations in the active set is equal to a predefined maximum number, and defining the first and second sets of trigger conditions on the basis of the radio signal properties of the active base station having the worst signal conditions, and wherein a measurement report is triggered by a radio signal of a candidate base station causes that worst base station to be replaced by the candidate base station (see col. 24, lines 39-60).

Regarding claim 9, in addition to disclose the limitations regarding claim 8 in the previous paragraph, Blakeney II et al. further discloses that the maximum number is dynamically defined by the network (see col. 24, lines 42-44).

Regarding claims 15 and 16, in addition to disclose the limitations regarding claim 11 in the previous paragraph, Blakeney et al. further discloses that the trigger conditions comprise at least one base station specific offset value (claim 15); and at least one of the offset values is dynamically defined by the network (claim 16) See col. 3, lines 32-44.

Art Unit: 2667

Allowable Subject Matter

8. Claims 12, 13, and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Contact Information

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel K. Lam whose telephone number is (703) 305-8605. The examiner can normally be reached on Monday-Friday from 8:30 AM to 4:30 PM.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (703) 305-4378. The fax phone number for this Group is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-4700.

DKL *dkl*
Dec 15, 2003

Chau T. Nguyen

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